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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/600,598	06/23/2003	Mitsuru Sekiguchi	740819-1014	5485

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NIXON PEABODY, LLP  
401 9TH STREET, NW  
SUITE 900  
WASHINGTON, DC 20004-2128

EXAMINER

WEISS, HOWARD

ART UNIT PAPER NUMBER

2814

DATE MAILED: 03/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/600,598	SEKIGUCHI, MITSURU	
	Examiner	Art Unit	
	Howard Weiss	2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 05 February 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 3-5 ~~is~~ are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3-5 ~~is~~ are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/23/03</u> . | 6) <input type="checkbox"/> Other: _____  |

Attorney's Docket Number: 740819-1014

Filing Date: 6/23/03

Continuing Data: Division of 09/931,190 (8/17/01, Abn)

Claimed Foreign Priority Date: 8/24/00 (JPX)

Applicant(s): Sekiguchi

Examiner: Howard Weiss

***Election/Restrictions***

1. Applicant's election without traverse of Group II, Claims 3 to 5, in Paper filed 2/5/04 is acknowledged. Claims 1 and 2 have been canceled.

***Priority***

2. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Japan on 8/24/00. It is noted, however, that applicant has not filed a certified copy of the Japanese application as required by 35 U.S.C. 119(b).

***Specification***

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

***Claim Objections***

4. The Markush groupings in Claim 5 should be put in the proper phrasing, "...selected from the group consisting of...". See MPEP §2173.05(h).

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United

States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 3 and 5 are rejected under 35 U.S.C. 102(e) as being anticipated by Edelstein et al. (U.S. Patent No. 6,181,012).

Edelstein et al. show all aspects of the instant invention (e.g. Figures 3) including:

- forming a recess **80** in an insulating film **100** on a substrate **52**
- depositing a first copper alloy film **78** containing either Al or Zr (Column 8 Lines 25 to 39) on a bottom and wall surface of said recess
- growing a second copper alloy **82** by electroplating to completely fill said recess
- integrating said first and second copper alloy films to form an imbedded wiring **46**

In reference to the claim language pertaining to the copper alloy having oxidation resistance, the claiming of a new use, new function, or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. *In re Best*, 195 USPQ 430, 433 (CCPA 1977) and *In re Swinehart*, 439 F. 2d 210, 169 USPQ 226 (CCPA 1971); please see MPEP § 2112. Since Edelstein et al. show all the features of the claimed invention, the oxidation resistance of the copper alloy is an inherent property of Edelstein et al.'s invention.

#### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Edelstein et al. and Hsu et al. (U.S. Patent No. 6,077,782).

Edelstein et al. show most aspect of the instant invention (Paragraph 6) except for the first copper alloy film having a (111) orientation with respect to the bottom of the recess. Hsu et al. teach to orient a copper film (Column 7 Lines 49 to 57) in the (111) orientation to improve the texture of the film (Column 2 Line 35). It would have been obvious to a person of ordinary skill in the art at the time of invention to orient a copper film in the (111) orientation as taught by Hsu et al. in the process of Edelstein et al. to improve the texture of the film.

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yamada (U.S. Patent No. 5,238,874) teach a process using a copper alloy film similar to the instant invention.
  10. Papers related to this application may be submitted directly to Art Unit 2814 by facsimile transmission. Papers should be faxed to Art Unit 2814 via the Art Unit 2814 Fax Center located in Crystal Plaza 4, room 3C23. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (15 November 1989). The Art Unit 2814 Fax Center number is **(703) 308-7722** or **-7724**. The Art Unit 2814 Fax Center is to be used only for papers related to Art Unit 2814 applications. The official TC2800 Before-Final, **(703) 872-9318**, and After-Final, **(703) 872-9319**, Fax numbers will provide the fax sender with an auto-reply fax verifying receipt of their fax by the USPTO.
  11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Howard Weiss at **(571) 272-1720** and between the hours of 8:00 AM to 4:00 PM (Eastern Standard Time) Monday through Friday or by e-mail via **Howard.Weiss@uspto.gov**.
- Any inquiry of a general nature or relating to the status of this application should be directed to the Group 2800 Receptionist at **(703) 308-0956**.

12. The following list is the Examiner's field of search for the present Office Action:

Field of Search	Date
U.S. Class / Subclass(es): 438/687	3/17/04
Other Documentation: PLUS Analysis Report	3/9/04
Electronic Database(s): EAST	3/17/04



Howard Weiss  
Examiner  
Art Unit 2814

HW/hw  
17 March 2004